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Sexual Health Information Seeking Online: A Mixed-Methods Study Among Lesbian, Gay, Bisexual, and Transgender Young People

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Abstract

The current study used a mixed-methods approach to investigate the positive and negative aspects of Internet use for sexual health information among lesbian, gay, bisexual, and transgender (LGBT) young people. A diverse community sample of 32 LGBT young people (aged 16-24 years) completed qualitative interviews focusing on how, where, and when LGBT young people use the Internet for sexual health information. Results indicate that although many participants seek facts and statistics about sexually transmitted infections (STIs) and HIV online, few conduct searches about broader aspects of sexual health. Participants reported that fear about becoming infected with STIs/HIV is a common motivator of searches and noted a number of reasons for not using online sexual health information, including stigma associated with being observed accessing LGBT or HIV information. Together, the results revealed not only significant interest in online sexual health information but also concerns about the perceived limitations of this promising method of sexual health promotion.

Keywords

sexual health, LGBT, Internet, online, health information, young people

Introduction

The Internet is a vast, growing repository of health information that is increasingly used by health care consumers (Fox & Jones, 2009; Hesse et al., 2005). Among these consumers are adolescents and young people, who maintain the highest online presence of any age group (Rainie, 2010; Ybarra, Mitchell, Finkelhor, & Wolak, 2007). As the majority of young people use the Internet to access health information (Buhi, Daley, Fuhrmann, & Smith, 2009; Santor, Poulin, LeBlanc, & Kusumakar, 2007), it is critical to understand how young people's reliance on online health information affects their development.

Young people appear to be especially interested in sexual health information online, as they search for sexual health information more frequently than other health topics (Buhi et al., 2009). Young people also tend to search for sexual health information more frequently than older age groups (Fox, 2006), making the Internet an influential setting in the development of sexual health for young people. According to the World Health Organization's (2004) definition, sexual health is "a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity." [AQ: 1] They further elaborated that sexual health requires a positive and respectful approach to sexuality and sexual/romantic relationships, which includes acceptance of one's own and others' sexual orientation. This definition identifies multiple dimensions of sexual health that may be influenced by sexual health information online.

Of note, the influence of the Internet may be especially heightened for lesbian, gay, bisexual, and transgender (LGBT) young people. This importance stems from the additional challenges LGBT young people face in the successful development of their sexual health when compared with their heterosexual peers. Unfortunately, traditionally influential settings such as schools, families, peers, and communities often fall short in providing helpful sexual health information to LGBT young people. School-based sex education programs frequently do not address the concerns and questions of many LGBT young people (Santelli et al., 2006). Furthermore, LGBT young people are less likely to receive school-based

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sex education at all (Goodenow, Netherland, & Szalacha, 2002) despite their desire for it (Seal et al., 2000). Parents, who are central figures in the development of sexual health among heterosexual young people (Miller, Benson, & Galbraith, 2001), may be less able to aid LGBT children's sexual development if they are unaware or unwilling to acknowledge the sexual minority status of their LGBT children (Savin-Williams, 2001). Within LGBT young people's peer groups, peer victimization of sexual minority young people (Mustanski, Newcomb, & Garofalo, in press) and the lessened availability of sexual partners can also limit the ability of LGBT young people to properly explore romantic relationships and appropriately develop this competency during adolescence. Finally, the community resources needed to meet the sexual health needs of LGBT young people are lacking despite their dramatically elevated risk for negative outcomes (Mustanski, Newcomb, DuBois, Garcia, & Grov, 2010). Together, this shortage of traditional resources has left a sizeable gap in the development of sexual health of LGBT young people.

Past research has supported the idea that the Internet is frequently a lifeline in the development of sexual health among LGBT young people (Hillier & Harrison, 2007). Many LGBT young people first "come out" online, and report learning about sexual behaviors, pursuing friendships with other LGBT young people, and exploring same-sex attraction online (Harper, Bruce, Serrano, & Jamil, 2009; Hillier & Harrison, 2007). The Internet appears to have important influences on offline sexual behavior as well, as a growing number of young men who have sex with men report meeting their first sexual partner online (Bolding, Davis, Hart, Sherr, & Elford, 2007). Although LGBT young people are known to be significant users of the Internet (Hillier & Harrison, 2007), little research has examined what types of sexual health information they seek, why they feel compelled to search online, how they perceive the Internet to fit into the context of their sexual development, and what information they believe is missing or difficult to access online. Furthermore, it is not clear what the positive and negative implications of online searches for sexual health information are for successful development of sexual health among LGBT young people.

Internet searches for sexual health information offer both potential costs and benefits for LGBT young people when compared with traditional sources of health information. On one hand, sexual health information on the Internet often conflicts with other sources or is of poor quality (Buhi et al., 2010). The large number of health information sources on the Internet can also lead young users to feel overwhelmed or unable to differentiate between helpful and unhelpful information (Kanuga & Rosenfeld, 2004). Much like offline settings, LGBT young people who are experimenting with new sexual identities online may encounter stigma (Mustanski, Lyons, & Garcia, in press).

On the other hand, the potential benefits of online sexual health information are significant and seem to outweigh the potential costs. Because of online group membership being especially influential for LGBT young people (Bargh & McKenna, 2004), a positive online environment can foster increased engagement and promotion of sexual health. Unlike most other settings, LGBT young people can query information pertinent to them at their own pace. For many LGBT young people, the Internet also allows increased privacy and anonymity, permitting them increased control over information seeking and disclosure than in traditional offline settings. The Internet can also act as a bridge to offline resources that would otherwise be unknown or unutilized, which as described above may be particularly impactful for LGBT young people. Finally, the Internet can act as a relatively safe space for experimenting with new identities that eventually translate into offline gains in sexual health (Tikkanen & Ross, 2000).

At a broader level, the widespread interest in Internet sexual health information among young people allows tremendous opportunity for intervention. Internet health interventions can be interactive, personalized, and tailored to the user, and generally show similar efficacy to offline interventions (Noar, Black, & Pierce, 2009; Ritterband et al., 2003). Thus, Internet health interventions targeting the specific sexual health needs of LGBT young people are a crucial next step in promoting sexual health in this group. However, the online needs of LGBT young people must be better known to maximize the benefits of such interventions.

The Current Study

The focus of the current study was to use a mixed-methods approach to investigate the positive and negative aspects of Internet use for sexual health information among LGBT young people. LGBT participants were interviewed about their use of the Internet for social, romantic, sexual, and informational purposes. Specifically, these interviews inquired about how, where, and when LGBT young people use the Internet for these purposes and how it has helped and harmed their sexual health. As past research has identified different styles of Internet use according to gender and race (Jackson et al., 2008), we also explored thematic differences according to these characteristics and the age of participants. The mixed-methods design was intended to take advantage of the strengths of both quantitative and qualitative methodologies (Axinn & Pearce, 2006). In this case, quantitative analysis was used to estimate the frequencies of participants endorsing particular themes, whereas qualitative methods were used to explore meanings and subjective understandings for the purpose of hypothesis generation.

Method

Participants and Procedure

A community-based sample of 32 LGBT participants completed the qualitative interviews. Participants were between the ages of 16 and 24 years, ethnically diverse, and able to

attend an interview located in Chicago. Participants were recruited through multiple sources, including flyers posted in community locations frequented by LGBT participants (e.g., restaurants, coffee shops, agencies serving LGBT young people) and word of mouth from LGBT peers who had participated in another study. Recruitment of participants continued until the information collected during qualitative interviews was judged to be saturated. Progress toward saturation was assessed by brief notes written by each interviewer to summarize new information that emerged during the interview. Notes were shared with the research team and reviewed against prior notes to determine when interviews were no longer revealing novel information about the topics under study. All participants gave informed consent prior to the interview.

Four interviewers conducted the qualitative interviews, which lasted approximately 60 to 90 minutes (see the appendix for an outline of the qualitative interview). With permission from participants, each interview was audio recorded. All interviewers followed a semistructured interview script (available from the corresponding author on request) beginning with background information and proceeded to questions concerning (a) use of the Internet; (b) the Internet and health information; (c) the Internet and identity; (d) the Internet, relationships, and sex; and (e) suggestions for sexual health websites. Questions were modified from a previous interview that examined the use of the Internet to find health information and/or sexual partners among young men who have sex with men and related qualitative themes to quantitative Internet usage patterns (Mustanski, Lyons, et al., in press). Questions were modified to adjust wording and appropriateness for LGBT participants between the ages of 16 and 24 years, expand the comprehensiveness of the interview, and to solicit feedback about ways to improve online sexual health resources. Interviewers followed the scripted questions but engaged in open-ended discussion resulting from the participants' answers.

Analytical Approach

Audio recordings of interviews were transcribed verbatim and entered into EthnoNotes (Lieber, Weisner, & Presley, 2003), a mixed-methods analysis program. Codes were generated based on the first several transcripts, reexamined, and refined using the constant comparison method (Taylor & Bodgan, 1998). In this method, the analysis was a dynamic process, with each transcript informing the analysis of further transcripts. A codebook was created with codes, brief descriptions, and when necessary for clarity included illustrative quotations (MacQueen, McLellan, Kay, & Milstein, 1998). This process resulted in a final set of 36 codes, both generated inductively (e.g., ''the influence of neighborhoods'') and derived from our initial research questions (e.g., ''sexual health information''). Each coder completed two training sessions to practice applying the final set of codes to a subset of excerpts. After discussion among interviewers to finalize coding guidelines and settle any remaining disagreements, the interviewers then completed two further coding sessions with a new subset of excerpts to measure reliability. We used the EthnoNotes software to calculate a kappa value that assessed the codes applied by a reference coder that were missed by a test coder. The average kappa was .84 across coders for the two reliability sessions, above the kappa value of .70 that was set as the criteria for adequate agreement between coders (Hruschka et al., 2004). After this demonstration of reliability, coders applied codes to all excerpts. Transcripts from the final two transcripts were then again tested for reliability of coding to assure quality throughout the coding process; kappas were greater than .80 for these reliability sessions.

Once coding was finished, two sets of excerpts were extracted for analysis. First, all excerpts containing both the "sexual health information" and "Internet" codes were selected. Second, excerpts coded with "suggestions for sexual health websites" were selected. Each set of output was then analyzed qualitatively to generate themes and subthemes characterizing the data. During qualitative analysis, coders used an iterative process to highlight evidence contradictory to our conclusions as well as the modal response (Ryan & Bernard, 2003). Coders first read the same subset of excerpts independently, then discussed the preliminary themes they perceived. Themes generating agreement across coders were retained for analysis of the next subset of excerpts. During the subsequent reading of the next subset of excerpts, coders attended to evidence supporting or contradicting proposed themes, while also noting novel themes. This process was repeated until all excerpts had been analyzed. To finalize the analysis, coders organized the list into a hierarchy of themes and subthemes and decided whether overlapping themes could be merged. The final list of themes for "sexual health information" and Internet" contained three primary themes, with 10 subthemes. The list of themes for "suggestions for sexual health websites" included four primary themes, with nine subthemes. Two of the coders applied codes representing identified themes and subthemes to the full set of selected excerpts.

Results

A total of 32 LGBT participants participated in the qualitative interviews: 13 Black, 8 Hispanic/Latino, 7 non-Hispanic White, 1 Asian, and 3 multiracial participants. Of these participants, 17 participants identified as male, 12 as female, 2 as female-to-male transgender, and 1 as male-to-female transgender. The average age of the sample was 19.5 years ($SD = 2.3$), with 7 participants younger than 18 years.

In thematic analyses, three primary themes emerged from the excerpts coded with "sexual health information" and "Internet." These included (a) topics of online searches, (b) motivation for searching online, and (c) reasons for not searching online. Table 1 summarizes the number of participants

Table 1. Themes and Subthemes for Excerpts Coded With "Sexual Health Information" and "Internet"

Theme	Number of Participants; *n* (%)	Number of Excerpts
Topics of online searches for sexual health information	24 (75)	52 (1.63)
Information about STIs/HIV	23 (72)	49 (1.53)
Facts and statistics about STIs/HIV	23 (72)	42 (1.31)
Offline sexual health testing	7 (22)	8 (0.25)
Condoms and dental dams	6 (19)	8 (0.25)
Additional precautions to reduce risk of STIs/HIV transmission	11 (34)	12 (0.38)
Mechanics of sexual behaviors	4 (13)	4 (0.13)
Relationship advice	4 (13)	5 (0.16)
Motivation for searching for sexual health information	14 (44)	24 (0.75)
Need to know information for the future	6 (19)	9 (0.28)
Presence of symptoms or infection	3 (9)	3 (0.09)
School project	6 (19)	8 (0.25)
Reasons for not accessing sexual health information online	20 (63)	32 (1.00)
Sexual health information perceived as irrelevant	11 (34)	13 (0.41)
Sexual health information not interesting	10 (31)	11 (0.34)
Perceived stigma resulting from being "caught" searching	6 (19)	7 (0.22)
Mistrust of online information	5 (16%)	5 (0.16)

Note. STI = sexually transmitted infection. For the number of participants, the number in parentheses is the percentage out of all participants who endorsed the theme or subtheme. For the number of excerpts, the number in parentheses is the average number of excerpts provided per participant.

and the number of excerpts that were coded with each theme or subtheme. It should be noted that the total number of participants or excerpts for a theme does not necessarily equal the sum of the corresponding subtheme frequencies, as one excerpt could be coded with multiple subthemes. Together, these themes provide a complementary framework describing what types of sexual health information LGBT participants are searching for, why they are searching for it, and what obstacles they perceive as preventing them from successfully accessing such information. We also present differences in code application based on gender, race, and age in the interest of building theory about the role of these characteristics in use of the Internet for sexual health purposes. To illustrate themes, we provide representative quotes from participants. To increase readability, we have deleted repeated words from participants' quotes. We also use ellipses to indicate places where we have skipped portions of a quote. Otherwise, we present the quotes verbatim.

Topics of Online Searches for Sexual Health Information

First, we examined the scope of participants' online searches for sexual health information. In general, searching for sexual health information was a common activity among the participants we sampled (24 out of 32 participants: 75%). By far, the most frequent type of search was for any type of information related to sexually transmitted infections (STIs) and/or HIV, reported by 23 participants (72%). This broad theme was subsequently classified into four subthemes.

The first subtheme included searches for facts and statistics about STIs/HIV, and was endorsed by every participant. These searches centered on finding facts about symptoms, how STIs/HIV are transmitted, and general prevalence rates. The following participant's description exemplified participants' common interest in this subtheme:

> Besides the way it's transmitted and everything, I needed to know, for STDs especially, where it was more common, and for HIV, I didn't really look into that. And the percentage of people and high school students, and then how much they're common in high school and stuff like that. (Participant 24, Hispanic/Latino female)

Notably, these searches involved education about the phenomena without necessarily seeking out how to apply that knowledge to their own behavior and health.

In contrast, the remaining three subthemes each involved seeking more applied information about steps to prevent or treat STIs/HIV infection. Seven participants (22%) reported searching for information about specific agencies and locations where they could obtain sexual health testing and/or treatment. Six participants (19%) used the Internet to find information about condoms or dental dams. For example, the following participant supplemented her knowledge about dental dams with online information:

> Basically I just looked up dental dams when people would tell me this is what a dental dam is for, but I never really saw a dental dam, so I looked it up on the Internet. So that helped a lot. It told me exactly what to do with it, or a female condom, what to do with it. So it wasn't a big huge shock when I first started using it, when I first started having sex. I knew about it. I understood

> why I needed it, what to do with it, and everything else. (Participant 21, Hispanic/Latino female)

Finally, 11 participants (34%) sought information about other precautions to reduce the risk of transmission (such as how to inspect partners for symptoms, or how to communicate with partners who already have symptoms). The following participant, although also interested in facts and statistics about STIs, described precautions she could take:

> I have looked up different symptoms and different signs of different STDs so I could look for them in people, like if I see anybody, just so I know exactly what's going on, so I'm aware if I see something that I need to watch out. (Participant 27, White female)

Although we classified information about STIs/HIV into four subthemes, participants frequently spanned multiple subthemes. For example, the following participant mentioned all four subthemes:

> I found out a lot of information, like the risks, what you should do in situations, like, precautions you should take. You know, what's that word, it just slipped my mind . . . hygiene, there you go. The hygiene, all that information, and places you can go to get tested. I went to the [name redacted] to actually get tested. Uh and ya know, what kind of diseases you can catch, what else? And, any like hazards like anything that you have to watch out for, situations that can occur, places you can go to if you like contract something, where to go to, where to buy [condoms] . . . (Participant 2, Hispanic/Latino male)

Together, participants indicated that they were searching for a wide variety of topics related to STIs/HIV information online. They displayed a relatively greater focus on discovering facts and statistics about STIs/HIV than learning about applications such as where to get tested, how to use condoms and dentals dams, or other actions to reduce risk.

However, information about STIs/HIV symptoms, risk, and prevention was not the sole focus of participants' online sexual health searches. Participants also described two main search topics that highlighted other needs relating to sexual health. One topic brought up by four participants (13%) was searching for information about the mechanics of sexual behaviors or other methods for increasing sexual pleasure. For example,

> It was like to see what, I was a virgin at the time or whatever and I was like "how do you really do stuff," so that kind of information about how to do it and sections on how to be careful if you were going to do it this way or that way. (Participant 13, Hispanic/Latino male)

Additionally, four participants (13%) indicated that the Internet was an important source of relationship advice, as illustrated by the following participant:

> They also had sections about relationships. How to have relationships, how to find the persons right for you, how to maintain a relationship and stuff like that. Like that's really useful 'cause like straight relationships and gay relationships, they're not so different, but there are things that are different, you know, that you can't ignore and I like that a lot because like they said like it's very important to keep the romantic part of the relationship versus the sexual part, because the romantic relationship keeps them all together you know. And like things you can do to make your partner feel better, to make them feel special, you know and it's just like really nice. Like how somebody actually dedicated their time to put this information out there for people who are looking for it. (Participant 2, Hispanic/Latino male)

Although searches about the mechanics of sex and aspects of healthy relationships were described less frequently than searches for general STIs/HIV information, they indicate that some participants are interested in obtaining more comprehensive sexual health information online. Overall, the topics of participants' searches for sexual information indicate that participants most frequently search for basic information about STIs/HIV but are interested in a variety of topics that relate to prevention as well as emotional and relationship elements of sexual health.

Motivation for Searching

Participants reported three primary motivations for searching out sexual health information online. One significant reason given for searching (six participants; 19%) was that participants felt a pressing need to know this information for their future. This subtheme encompassed participants who feared they could have already contracted STIs/HIV because of past or current sexual behavior (despite no present awareness of infection), as well as those who perceived sexual health information would be important for forthcoming sexual experiences. The following participant described his urge to search shortly after a sexual experience:

> The first time I had sex after that time period, when I was in my auntie's house, it was unprotected again. I was just making mistakes, so I was just like, whoa, I need to, like I never felt any symptoms of an STD, I never saw anything, but then I know there are some that you don't see symptoms of. And so then I looked online to see what those symptoms were. (Participant 22, Black male)

A second motivation that participants reported was searching due to the actual presence of symptoms or infection: "Actually, I had read up on it because I had contracted this STD." (Participant 29, Black male). Only three participants (9%) endorsed this motivation, making it less common than searches initiated due to fear or worries about becoming infected.

Finally, six participants (19%) initiated searches for sexual health information because of requirements for a school project. This motivation was unique in that it was not self-motivated; however, many participants reported benefitting from the experience:

P: I needed to know about STDs for school research also, and abortion for school research. So most of it, even though it's for the school information and stuff, I use it towards my personal benefits, like if I need to know of something or places where I can get stuff, I can just go on the Internet and then use that for school.
I: So these projects, like the abortion one, did you pick these projects so that you can also learn for your own personal benefit?
P: It was given to me. And I'm just going like, oh, this is good because I can learn from it.
I: So the same with the STD one?
P: Yes. (Participant 24, Hispanic/Latino female)

Overall, participants' reported motivations for searching for sexual health information were more varied than the topics of their online searches. Nonetheless, a notable subset of participants appeared motivated by an urgent sense that they needed to know the information because of feared relevance. Additionally, a subset of participants said that school requirements to conduct searches helped them initiate relevant information gathering.

Reasons for Not Accessing Sexual Health Information Online

Unfortunately, participants perceived a number of factors as preventing them from seeking sexual health information online. A total of 10 participants (31%) believed that sexual health information was not relevant to their life. Participants reported a number of reasons why the information was irrelevant, including perceiving low risk of contracting STIs/HIV or that STIs/HIV in general were not a sufficiently concerning problem. The following participant explained his rationale for not searching for sexual health information:

I: How about using the Internet to look up information about HIV or STIs or sexual health information?
P: No, you know what, I don't because, like at the moment, it's just me and my partner, and both of us, we cool, like in regards to STDs and stuff like that. Like we cool, so I don't even go online for that stuff. I don't have no reason to. (Participant 29, Black male)

Particularly when describing others, many participants believed that sexual health information does not interest young people until they fear that they have contracted an STI and/or HIV (10 participants; 31%). This perception seemed linked to participants' reported motivations for searching, in which a major motivator was feeling a pressing need to know sexual health information because of feared relevance. The following participant noted the difficulty of capturing LGBT young people's attention, although she struggled to describe why it is difficult:

P: Um, I don't know, I just, like a lot of my friends . . . I don't know, they stick on what catch they interest and that's not something that catch a lot of our interest until they get something and then they wanna know what's going on.
I: And what do you think, what's the difference between something that would catch your interest versus something that wouldn't?
P: 'Cause if it's gon catch our interest you gon automatically look for it or find a way to know something about it. If you don't you just gon like blow it off or get to it when you want to and that's where people mess up.
I: Ok, 'cause HIV and AIDS doesn't catch your [AQ: 2]
P: Right. (Participant 8, Black female)

Another reason for not seeking sexual health information online was the perceived stigma resulting from being "caught" searching. This concern was noted by six participants (19%). The following participant described how he believes fear of stigma prevents searches:

P: I think it's because they don't have the privacy to look at it themselves because, when you in the gay community it's the same called gagging. You know when you gag on a girl or whatever and if somebody walks past and see that you're on that, they would assume that you have something.
I: Wait say that again for me.
P: Ok gagging is just like talking about somebody. You know what I'm saying?
I: Ok.
P: And if I walk past and I gag on that person, in other words talking about them.
I: Ok.
P: You know what I'm saying, my gag will be "Oh girl got, you got it" you know what I'm saying. You got HIV or you got something.
I: Oh, ok.

P: You know what I'm saying and that very much prevents, the younger youth not to want to. (Participant 10, Black male)

Finally, five participants (16%) reported a mistrust of online information that prevented them from using the Internet as a resource for sexual health information. Several participants noted that online information was less reliable than offline sources of information such as a doctor:

P: . . . then we go to the doctor's. They tell you one thing, then when you finally do look on the computer you gon hear something totally different.
I: What do you mean?
P: Like, like my cousin she had caught a STD or whatever
I: Mhum.
P: 'Cause she was raped, she caught a STD and the doctor told her that her STD could be cured or whatever, but when she looked on the computer she said STD she got couldn't be cured. But I think the computer was wrong 'cause she ain't got it no more. (Participant 7, Black female)

Notably, other potential obstacles such as limited physical access to the Internet or difficulty searching the Internet were not widely perceived as a problem by this sample.

Gender, Race, and Age Differences

Established consensus guidelines do not exist for the size of group differences to be considered meaningful in mixed-methods research. As a result, we considered gender, race, and age differences to be meaningful in the current study if they met three criteria: (a) differences had to be noticed as a theme during qualitative theme analysis, (b) the themes being compared had to be endorsed by a minimum of five participants, and (c) code application rates within each of the two groups being compared had to differ by at least 20%. Several interesting patterns were evident with these criteria, particularly with regard to participants' reported reasons for not searching for sexual health information online. We present these exploratory patterns for generating a framework for continuing research on individual differences among LGBT young people rather than as a means of testing quantitative group differences using significance testing.

For gender, participants identifying as male more frequently reported seeking testing and treatment information (6 out of 17 participants; 35%) than participants identifying as female (1 out of 12 participants; 8%). This finding may be related to a broader gender difference that was evident for reasons for not seeking sexual health information online. Specifically, participants identifying as female (6 out of 12 participants; 50%) were more likely than those identifying as male (2 out of 17 participants; 12%) to view sexual health information as irrelevant to their lives. Both participants identifying as female-to-male transgender (2 out of 2; 100%) also endorsed sexual health information as irrelevant to their lives. The following female-to-male transgender participant demonstrated a characteristic belief that his risk of infection was sufficiently low that he shouldn't seek sexual health information:

I: Yeah. Okay, so what about using the Internet to look up information about HIV, STIs, birth control, anything like that?
P: No, not really. Like I said, I'm not too concerned about sexual health. But I guess that was mainly because I was just having sex with women. (Participant 19, White Female-to-Male Transgender)

For race results, fewer Hispanic/Latino participants (2 out of 8; 25%) reported reasons for not seeking sexual health information online compared with participants from other racial backgrounds (17 out of 24; 71%). When we examined links to participants' reported motivations for searching, Hispanic/Latino participants also reported less of a pressing need to know sexual health information, which was reported by 0 out of 8 (0%) Hispanic/Latino participants, but mentioned by 6 out of 24 (25%) participants of other races.

For perceived stigma attached to being caught searching online for sexual health information, 4 out of 13 (31%) Black and 1 out of 3 (33%) multiracial participants mentioned this reason for not seeking sexual health information online. In contrast, only 1 out of 15 (7%) White, Hispanic/Latino, and Asian participants endorsed this obstacle. Among Black and multiracial participants, stigma frequently was invoked when answering a question about possible racial differences in online searches for sexual health information. The following participant illustrated this pattern:

I: We found from a different study that African American youth are less likely to use the Internet to search for HIV and STD and sexual health information. Why do you think that might be?
P: Maybe because they don't have access. Or also, if they're on the down low, then even if they do have access, would they run the risk of possibly exposing themselves by looking at that information? I mean, because especially if you're younger, then it's like, okay, am I communicating, are they communicating to their parents what their sexual behaviors are? Are they having sex? And are they out or not? And so do they have access and are they willing to take the risk and use it to look up these particular things?
I: Because if they look it up, other people are going to know that they're looking it up?

Table 2. Themes and Subthemes for Excerpts Coded With "Suggestions for Sexual Health Websites"

Theme	Number of Participants; *n* (%)	Number of Excerpts
Website content	28 (88)	58 (1.81)
Facts and statistics about STIs/HIV	14 (44)	19 (0.59)
Offline resources	11 (34)	15 (0.47)
How to come out	10 (31)	14 (0.44)
Additional precautions to reduce risk of STIs/HIV transmission	9 (28)	11 (0.34)
Technical details	24 (75)	56 (1.75)
Type of presenter	13 (41)	13 (0.41)
Social connection	22 (69)	33 (1.03)
Connecting with peers	20 (63)	28 (0.88)
Support and helplines	8 (25)	10 (0.31)
LGBT-specific suggestions	18 (56)	29 (0.91)
LGBT-specific information	14 (44)	20 (0.63)
LGBT events	9 (28)	11 (0.34)

Note. STI = sexually transmitted infection; LGBT = lesbian, gay, bisexual, and transgender. For the number of participants, the number in parentheses is the percentage out of all participants who endorsed the theme or subtheme. For the number of excerpts, the number in parentheses is the average number of excerpts provided per participant.

> P: Well, it's a possibility, and then they think, well, hey, if this person sees me looking at something, they're going to be like, why are you looking this up, and then they'll ask questions. And so, yeah. And I also think it's because [pause] I guess the fear. Like especially in that community, in the black community, and I guess somewhat in the Latino community, too, it's like once you get, like, if you get AIDS or if you get HIV, then it's just over. You might as well, everyone will ostracize you, and then you just . . . it's over. (Participant 22, Black male)

A final racial difference was apparent for sexual health information not catching participants' attention. In this case, 7 out of 13 (54%) Black participants mentioned the theme, whereas it was only reported by 2 out of 19 (11%) participants of other races. The following participant suggested that interest in other online activities may play a role in sexual health information not catching Black participants' attention:

> P: I think it's just when you think about what the Internet is used for, you wouldn't necessarily go on the Internet just to look up information about AIDS. I mean, like, who does that, like seriously? No one thinks, no one really thinks about that when they're on the Internet.
> I: What do you think about when you're on the Internet?
> P: You think about conversating, meeting, uploading pictures, checking your email and checking your MySpace and stuff. You don't really think about that. But at the same time, it is important. (Participant 26, Black male)

This quote highlighted the possible influence of broader race differences in styles of Internet use and access (Jones, Johnson-Yale, Millermaier, & Pérez, 2009) when exploring reasons for not seeking online sexual health resources.

For age comparisons, we divided participants into groups aged 16 to 17 or 18 to 24 years. Although there did not appear to be meaningful differences for most of the themes, fewer participants in the younger group (1 out of 7; 14%) reported searching for additional precautions to reduce the risk of STIs/HIV transmission than those in the older group (10 out of 25; 40%). In addition, younger participants (3 out of 17; 18%) were less likely than older participants (17 out of 25; 68%) to mention reasons for not accessing sexual health information online.

Improving Sexual Health Information Online

Next, we examined participants' suggestions for improving sexual health websites for LGBT young people. This examination was intended to provide a starting point for further integrating LGBT young people as stakeholders in online interventions targeting sexual health. In thematic analyses, four primary themes emerged from the excerpts coded with "suggestions for sexual health websites." These included (a) website content, (b) technical details, (c) social connection, and (d) LGBT-specific suggestions. Table 2 summarizes the number of participants and the number of excerpts that were coded with each theme or subtheme. For this analysis, we summarize each theme briefly but do not present representative excerpts as the themes are relatively self-evident.

Overall, participants were enthusiastic about offering suggestions. In the entire sample of 32 participants, 28 (88%) suggested improvements to website content. Within this theme, three subthemes emerged that mirrored the topics participants reported already searching for online: (a) facts and statistics about STIs/HIV, (b) offline resources, and (c) additional precautions to reduce the risk of STIs/HIV transmission.

However, participants also suggested providing information about how to come out (10 participants: 31%) in any website geared toward LGBT young people.

Next, 24 participants (75%) offered tips about technical details. This theme covered a large array of suggestions relating to fonts, color schemes, mode of presentation (text vs. pictures vs. video), and numerous other website characteristics. Although recommendations varied tremendously, participants favored using visuals and multimedia rather than text to convey information. The single subtheme that emerged under technical details was the type of presenter used to convey sexual health information in videos, which was mentioned by 13 participants (41%). Interestingly, participants disagreed about whether LGBT young people would benefit more by receiving sexual health information from a peer who was similar in age and experience to them, or rather an older presenter representing the scientific community (or both types of presenters).

A substantial number of participants (22; 69%) were interested in the potential social connections that could be formed through an interactive website. Within these participants, 20 (63%) suggested incorporating a social networking element to the website so that LGBT young people could create profiles, chat, and form friendships with other LGBT young people. In addition, eight participants (25%) recommended an online support center in which website employees would be available in real time to answer questions and provide emotional support to LGBT young people.

Finally, a theme of LGBT-specific suggestions was mentioned in 18 participants' interviews (56%). Of these participants, 14 (44%) indicated that information specific to LGBT young people (e.g., information about same-sex relationships, exploring one's identity) would be helpful to add to sexual health websites. In addition, 9 participants (28%) recommended adding information about offline LGBT-specific events (e.g., community events, local organizations).

In terms of possible group differences in participants' suggestions for online sexual health information, it should be noted that participants younger than age 18 years appeared to be more enthusiastic about potential social connections online than older participants. All participants younger than 18 years (7 out of 7; 100%) endorsed the general social connections theme, as opposed to 15 out of 25 (60%) older participants. For the subthemes, all participants younger than 18 years (7 out of 7; 100%) mentioned social networking, which only 13 out of 25 (52%) older participants discussed. For the online support center subtheme, a greater number of younger participants (3 out of 7; 43%) mentioned the idea than older participants (5 out of 25; 20%).

Generally, participants' suggestions for sexual health websites mirrored the searches they report already conducting for sexual health information. However, the significant interest in social connection as part of sexual health online, as well as greater desire for LGBT-specific resources, emerged as important additional ways that LGBT young people are interested in using online sexual health websites.

Discussion

The current study highlighted the significant role that the Internet plays in the sexual development of LGBT young people. Among a diverse sample of LGBT young people, we found that the Internet was widely used to seek sexual health information, particularly information about STIs/HIV. LGBT young people appeared to be motivated to search for sexual health information largely either because of a sense of personal relevance (i.e., having symptoms of infection or perceiving a pressing need to know information for the future) or because of school projects. Unfortunately, many young people reported reasons for not accessing sexual health information online, including fear of stigma, a sense of low personal relevance, disinterest, and mistrust of online information. Several gender, race, and age differences were also evident in the relative endorsement of themes and subthemes. Participants identifying as male reported greater use of the Internet for STIs/HIV testing and treatment information, whereas those identifying as female or female-to-male transgender were more likely to view sexual health information as irrelevant to their lives. Hispanic/Latino participants identified fewer reasons for not seeking sexual health information online, but also felt less of a pressing need to know that information. Black participants noted greater fears of the stigma attached to being seen searching for LGBT-relevant sexual health information, as well as a greater likelihood that sexual health information would not catch their attention. Finally, participants suggested promoting greater social connection as part of sexual health online, a theme that was particularly prevalent among participants younger than age 18. Together, these results suggest that the Internet is having largely positive effects on LGBT young people when it is used to seek out sexual health information. However, important differences may exist in usage according to LGBT young people's gender, race, and age. Furthermore, there appear to be currently unmet opportunities for online interventions aimed at improving LGBT young people's development of sexual health.

Overall, the widespread usage of the Internet for sexual health information suggests that the Internet is a fertile ground for intervening in LGBT young people's development of sexual health. The current findings fit well with previous research that has identified the Internet as a main source of sexual health information for young people (Hillier & Harrison, 2007). The privacy, anonymity, and control over searches available through the Internet may hold special significance for LGBT young people (Kanuga & Rosenfeld, 2004), who frequently encounter stigma and other obstacles when seeking out sexual health information through traditional sources.

The topics of online searches reported by LGBT young people appeared to indicate that they are quite interested in

general facts and statistics about STIs/HIV. Although this information can be helpful, it has been long recognized by sexual health researchers that increases in knowledge about sexual health are often not sufficient to lead to behavioral change (Oakley et al., 2010). In the current study, fewer participants reported searches to increase behavioral skills, such as seeking out information about offline testing and treatment, as well as practical information about how to use condoms and dental dams, that should be more likely to coincide with behavioral change. This discrepancy between factual information and more immediately applicable knowledge highlights a gap that that can be addressed by online resources.

To address this gap effectively, it is helpful to understand the common reasons LGBT young people pinpointed for why they do not access online sexual health resources. Specifically, many participants reported orienting away from online sexual health information because of perceived irrelevance, or the material not attracting their attention. Therefore, a clear next step is for researchers and practitioners to develop more appealing and/or engaging online resources for LGBT young people. One successful model is provided by interactive online media, which have been used among adult men who have sex with men to reduce high-risk sexual behavior (Read et al., 2006). This model encourages an active learning role among participants by providing information within the context of absorbing narratives, engaging users' emotional responses, integrating users into decision making for characters within the narratives, and tailoring content to the users' particular decisions. This type of resource could be modified to focus on applied behavioral skills that appeared to be less often accessed by LGBT young people than general facts and statistics about STIs/HIV.

Social networking tools are another critical way to explore for engaging LGBT young people with sexual health information (Bennett & Glasgow, 2009). The current sample expressed widespread interest in using social networking to disseminate sexual health information, with particular enthusiasm among participants who were younger than 18 years of age. Importantly, social networking not only allows researchers and practitioners to provide and receive information, but allows LGBT young people to exchange information and experiences with LGBT peers, engendering broader development of their sexual health (Bargh & McKenna, 2004). This opportunity allows a greater chance for LGBT young people to "test out" identities and gather information in a more controlled, private environment than is typical among general Internet resources or large social networking sites. Furthermore, the powerful filtering of information by social networks can connect LGBT young people to higher quality information (Bennett & Glasgow, 2009) than they often find in their initial attempts to gain sexual health knowledge from pornography or limited web searches (Kubicek, Beyer, Weiss, Iverson, & Kipke, 2010). In summary, although health interventions have been slow to conduct empirical examinations of aspects of social networking, the current evidence suggests that it is increasingly important to study social networking among younger people.

A broader implication of the current data is the need for integration of sexual health information into LGBT young people's existing online activities. Although increasing the appeal of sexual health information can increase engagement among already connected users, it does not automatically lead to exposure among unconnected members of the target population. Creating a web presence that is active and/or linked within Facebook, MySpace, or other popular social networking sites could be a significant way to increase exposure to many online resources. When combined with engaging content, there is a greater chance that these resources will be recommended to friends and acquaintances. Furthermore, allowing LGBT young people to contribute to the functionality of a site that is accessible within their usual online activities is likely to be engaging and to encourage recruitment of others as part of a collaborative team (Bennett & Glasgow, 2009).

These data also highlight possible considerations concerning subsets of the population of LGBT young people. Within the subgroup comparisons, many lesbian and bisexual young women, as well as both female-to-male transgender participants, identified low perceived personal relevance as an obstacle to searching for sexual health information. Within these groups, appraisals of low relevance may not be entirely unfounded, because of lesbian women's low actual risk of contracting HIV. Nonetheless, these young people are still at risk for STIs and may lack the sexual scripts that guide the safe-sex behaviors of heterosexual people or gay and bisexual men (Power, McNair, & Carr, 2009). Thus, these young people could potentially benefit from online information that increases their perceived personal relevance while providing healthy sexual scripts.

Fear of stigma was identified as an obstacle to online sexual health behaviors, despite online behaviors tending to be relatively anonymous compared with offline ones. For Black young people, in particular, the risks of unwanted disclosure of LGBT status may be perceived as too high relative to the perceived benefits of seeking sexual health information. It is possible that fear of stigma may be exacerbated by decreased Internet privacy among Black LGBT young people, a possibility that was not widely endorsed but was mentioned by several participants. Researchers are still debating whether the "digital divide" between people of different races and socioeconomic statuses is narrowing or remaining steady (Jackson et al., 2008; Jones, Johnson-Yale, Millermaier, & Pérez, 2009). However, any degree of restricted access or privacy among Black LGBT young people would be likely to intensify the fear of stigma that is already heightened in this group. It is critical that Internet interventions for sexual health determine ways to lessen fears of stigma and provide safe access for Black LGBT young people. This should be a priority for such interventions, especially when considering that Black

young gay and bisexual men are already at great risk for HIV infection (Centers for Disease Control and Prevention, 2010; Malebranche, 2003).

Hispanic/Latino young people in the current study reported fewer reasons for not seeking sexual health information online but also less of a pressing need to know that information. These findings are analogous to past research finding that Hispanic/Latino, Black, and White college students all reported the Internet to have a positive impact on their academic lives, but Hispanic/Latino college students used it less for this purpose than the other racial groups (Jones et al., 2009). It is an open question whether Hispanic/Latino young people may perceive obstacles to searches differently, or possibly encounter fewer obstacles because of lessened searching. If Hispanic/Latino young people search less, this may be due to less outreach to this community that would make the issues of HIV and STIs seem personally relevant (Erausquin et al., 2009). Future research is needed to specifically assess the sexual health needs of Hispanic/Latino LGBT young people.

Implications for Practice

The current data have implications for the way practitioners handle sexual health information when working with LGBT young people. During interviews, it was evident that many LGBT young people had never openly discussed their online sexual health experiences in detail, despite these experiences contributing heavily to their sexual health. The enthusiasm and willingness of participants to offer suggestions about web resources reflected participants' openness when discussing their online experiences in a safe environment. Practitioners may find it fruitful to ask LGBT young people about their online experiences with sexual health information and attempt to assess the quality of the resources being accessed.

Critically, as LGBT young people identify problems with the quality of online information, practitioners can help identify higher quality resources and accumulate client feedback that could be used for designing future online resources. Practitioners can also act as a sounding board to identify ways of addressing young people's perceived reasons for not using sexual health information online. Practitioners who are perceived to be knowledgeable about online resources and empathetic to perceived obstacles such as stigma or mistrust of the Internet can help young people create plans to address these concerns. For example, a practitioner could help brainstorm ways to create safe access to the Internet, or criteria for evaluating the accuracy of online content. Through knowledge of the current data, practitioners can also normalize LGBT young people's perceived reasons for not searching for sexual health information online and relate an individual's concerns to a larger community of peers. Finally, practitioners can also monitor and offer support for possible cultural differences in online experiences, such as the heightened fear of stigma found among Black participants in the current study. Through these and other techniques, practitioners have the opportunity to turn potential roadblocks into temporary obstacles.

Practitioners should also be aware of their own role as creators of online resources for LGBT young people. Testing and treatment resources were not widely accessed online by the current sample, suggesting significant room for promotion of these resources. By expanding individual practitioners' Internet presence to include social networking sites and links to other researchers and practitioners, practitioners can increase the likelihood that LGBT young people will (a) be exposed to LGBT-specific treatment resources, (b) follow practitioners' links to other, high-quality resources, and (c) create informal networks connecting other LGBT peers to treatment resources.

Future Directions and Conclusion

The current findings must be interpreted within the limitations of mixed-methods research. Although the information provided by interviews was judged to be saturated using the current sample size, the number of participants was insufficient to make strong inferences about group differences. Thus, although we have attempted to outline possible group differences, gender, race, and age differences should be interpreted as preliminary until tested in future research. Additionally, it would be helpful to supplement self-report interviews with other measurement methods and designs, including measurement of actual online behaviors, and to link improvements in the quality of online resources with resultant changes in health behaviors.

Previous research has suggested that the Internet is nearly universally used as the primary source of sexual health information among young people (Kanuga & Rosenfeld, 2004). The current results suggest that the Internet is a primary source for many LGBT young people, but for many there are important obstacles, and more effort is needed to make sexual health information accessible. This mixed-methods research suggests that among LGBT young people, the Internet is a promising resource that has not yet fulfilled its full potential.

Appendix

Outline of Qualitative Interview

Note: The content of the interview will focus on the issues identified below, but will follow a natural progression based on participant responses.

"The purpose of this interview is to learn YOUR opinions about the role of the Internet in the lives of LGBQQ young people. We are specifically interested in things like how the Internet may help you come to understand your identity, learn about

(continued)

Appendix (continued)

your health, and meet other people like you. If you don't feel comfortable answering a question, just let me know and we'll skip it. All answers are confidential. Your name will *never* be attached to the things you tell me. You can choose not to answer any question by simply saying, 'I don't want to answer that.'"

A. Background

How old are you?

How do you identify in terms of your race or ethnicity?

Where are you living? Do you live with anyone?

Are you currently working? What kind of work do you do?

What is the highest grade or year that you have completed in school?

Less than high school

High school or GED

Some college

College degree or more

Some people say that they are "gay, lesbian, bisexual, or straight." How would you describe yourself? How long have you been aware of those feelings/that orientation?

Tell me about the first time you were attracted to someone (of the same sex). How did you feel? What did you think?

Have you talked about this with your family and/or friends? What happened? Describe the experience. Who did you come out to first? What role has your ethnicity played in this? How do you think it is different for youth of other ethnicities? How do you think people of different ethnicities' LGBQQ experiences have varied because of gender?

How do you think your neighborhood affects coming out and/or sexual orientation? Do you visit other neighborhoods in Chicago? Probe: Do you think your experiences are different in different neighborhoods?

How have you used the Internet to come out? How did it go? Did you come out online first before telling someone offline? IF YES, why online first?

What are the day-to-day experiences that make you feel better or worse about being LGBT. Probes: Think about a recent experience you had that made you feel (good/bad) about being LGBT. Try and get a couple examples of each. Probe: Any about if there are any online experiences.

B. Use of the Internet

What are some things that you do online?

What are some of your favorite things to do online?

What do you spend the most time doing online? *Find out a few top things.*

What websites do you use the most?

How much time do you spend online in an average week?

Where do you access the Internet? *(From home? From school? From someone else's house, like a friend of relative's house? From the library? At a public location, like a teen center, coffee shop, or internet café?)* Do you feel like you have privacy when you log on at these places? *Probe: How does privacy differ based on location? How does this effect what you do online?*

Do you use the Internet on your cell phone? What do you use it for?

How do you think they way you have used the Internet has changed as you got older?

Why do you do what you do on the Internet? (Include probe about how everyone does what they do for a reason, because they like it, because they get something from it, etc.)

C. Internet and Health Information

Have you ever use the Internet to seek out health information? What kind of information?

What about Information about HIV/STIs/birth control?

Where did you go? (try and list at least 4-5)

Have you ever gone to a site to look up information on how to prevent HIV/STIs? *(Example of information on how to talk to your partner about STIs/using condoms.)*

How do you decide what websites are a *good* source of health information?

How do you think this information compares with health information that you might find offline?

How do you decide that a website is a *bad* source for health information?

What have you liked about these websites? What have you disliked?

What is something that is missing online that you would like to see? *(Example you were looking for something and couldn't find it? When you did use a website was there something you didn't like? Do you feel like there is information specific for people like you? Do you feel like your community is represented on these sites?)*

IF AFRICAN AMERICAN: One of our studies found that African American youth are less likely to use the Internet to search for HIV/AIDS information. Why do you think this is?

D. Internet and Identity

Have you used the Internet to find out about LGBQQ people or issues? In what ways?

At times when you have felt like you were trying to explore or understand your sexuality, how was the Internet helpful?

Where did you go? (try and list at least 4-5)

What have you liked about these websites? What have you disliked?

How does it compare with information about identity that you might get offline?

IF LESBIAN/BISEXUAL FEMALE: Have you ever looked up lesbian fiction? *Probe: what did you think about it?*

What is something that is missing online that you would like to see? (*Probe related to identity)*

Have you experienced unequal amounts of images of or information for people of color versus White people or lesbians/bisexuals versus gay men?

Have you ever had a negative experience online about being gay/lesbian/bi? (*Probe: Did you ever see anything online that hurt your feelings or made you feel bad about being gay/lesbian/bi?)*

E. Internet, Relationships, and Sex

How do you use the Internet in terms of friendships? *Probe with more how questions.*

Have you used the Internet to meet friends? What about LGBQQ friends? Probe: People, their age? Did you eventually meet them in person or was it online an online friendship?

Where did you go online? (try and list at least 4-5)

What about dating? Probe: How have you used the Internet for dating? Is it an online and offline relationship?

Where did you go online? (try and list at least 4-5)

What have you liked about these websites? What have you disliked?

Have you used the Internet to meet someone to hook up with? Probe: What did you do with this partner? Did you have sex? Did you have unprotected sex? Did they talk about safe sex online?

IF Yes to dating or sex:

Tell me about the last time you hooked up with someone that you met online? How did you meet? Tell me about the relationship. What did you do sexually? Was it safe sex?

Tell me about the last time you hooked up with someone that you met offline? How did you meet? Tell me about the relationship. What did you do sexually? *Was it safe sex?*

How are your relationships different if you meet someone online or offline?

At what age did you first hook up with someone? How has meeting people to date or have sex with changed as you get older? Are you looking for different things? *If yes, ask what prompted the change.*

We have found that lesbians and bisexual women often don't look for porn/sexual things online, while gay and bisexual men often do. Why do you think that might be?

F. Help Us Make a Website for LGBT Youth

If you were designing a website for LGBT youth, what do you think should be on it?

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References

Axinn, W. G., & Pearce, L. D. (2006). *Mixed method data collection strategies*. Cambridge, England: Cambridge University Press.

Bargh, J. A., & McKenna, K. Y. A. (2004). The Internet and social life. *Annual Review of Psychology, 55*, 573-590.

Bennett, G. G., & Glasgow, R. E. (2009). The delivery of public health interventions via the Internet: Actualizing their potential. *Annual Review of Public Health, 30*, 273-292.

Bolding, G., Davis, M., Hart, G., Sherr, L., & Elford, J. (2007). Where young MSM meet their first sexual partner: The role of the Internet. *AIDS and Behavior, 11*, 522-526.

Buhi, E. R., Daley, E. M., Fuhrmann, H. J., & Smith, S. A. (2009). An observational study of how young people search for online sexual health information. *Journal of American College Health, 58*, 101-111.

Buhi, E. R., Daley, E., Oberne, A., Smith, S., Schneider, T., & Fuhrmann, H. (2010). Quality and accuracy of sexual health information web sites visited by young people. *Journal of Adolescent Health, 47*, 206-208.

Centers for Disease Control and Prevention. (2010). Prevalence and awareness of HIV infection among men who have sex with men: 21 cities, United States, 2008. *Morbidity and Mortality Weekly Report, 59* 1201-1207.

Erausquin, J., Duan, N., Grusky, O., Swanson, A.-N., Kerrone, D., & Rudy, E. (2009). Increasing the reach of HIV testing to young Latino MSM: Results of a pilot study integrating outreach and services. *Journal of Health Care for the Poor and Underserved, 20*, 756-765.

Fox, S. (2006). *Online Health Search 2006*. Washington, DC: Pew Internet and American Life Project.

Fox, S., & Jones, S. (2009). *The social life of health information*. Washington, DC: Pew Internet and American Life Project.

Goodenow, C., Netherland, J., & Szalacha, L. (2002). AIDS-related risk among adolescent males who have sex with males, females,

or both: Evidence from a statewide survey. *American Journal of Public Health, 92*, 203-210.

Harper, G. W., Bruce, D., Serrano, P., & Jamil, O. B. (2009). The role of the Internet in the sexual identity development of gay and bisexual male adolescents. In P. Hammack & B. Cohler (Eds.), *The story of sexual identity: Narrative perspectives on the gay and lesbian life course* (pp. 297-346). Oxford, England: Oxford University Press.

Hesse, B. W., Nelson, D. E., Kreps, G. L., Croyle, R. T., Arora, N. K., Rimer, B. K., . . . Viswanath, K. (2005). Trust and sources of health information: The impact of the Internet and its implications for health care providers: Findings from the first Health Information National Trends Survey. *Archives of Internal Medicine, 165*, 2618-2624.

Hillier, L., & Harrison, L. (2007). Building realities less limited than their own: Young people practising same-sex attraction on the Internet. *Sexualities, 10*, 82-100.

Hruschka, D., Schwartz, D., St. John, D., Picone-Decaro, E., Jenkins, R., & Carey, J. (2004). Reliability in coding open-ended data: Lessons learned from HIV behavioral research. *Field Methods, 16*, 307-331.

Jackson, L. A., Zhao, Y., Kolenic, A., Fitzgerald, H. E., Harold, R., & Von Eye, A. (2008). Race, gender, and information technology use: The new digital divide. *Cyberpsychology & Behavior, 11*, 437-442.

Jones, S., Johnson-Yale, C., Millermaier, S., & Pérez, F. S. (2009). U.S. college students' Internet use: Race, gender and digital divides. *Journal of Computer-Mediated Communication, 14*, 244-264.

Kanuga, M., & Rosenfeld, W. D. (2004). Adolescent sexuality and the internet: The good, the bad, and the URL. *Journal of Pediatric and Adolescent Gynecology, 17*, 117-124.

Kubicek, K., Beyer, W. J., Weiss, G., Iverson, E., & Kipke, M. D. (2010). In the dark: Young men's stories of sexual initiation in the absence of relevant sexual health information. *Health Education & Behavior*, *37*, 243-263.

Lieber, E., Weisner, T. S., & Presley, M. (2003). EthnoNotes: An Internet-based field note management tool. *Field Methods, 15*, 405-425.

MacQueen, K., McLellan, E., Kay, K., & Milstein, B. (1998). Codebook development for team-based qualitative analysis. *Field Methods, 10*, 31-36.

Malebranche, D. J. (2003). Black men who have sex with men and the HIV epidemic: next steps for public health. *American Journal of Public Health, 93*, 862-865.

Miller, B., Benson, B., & Galbraith, K. (2001). Family relationships and adolescent pregnancy risk: A research synthesis. *Developmental Review, 21*, 1-38.

Mustanski, B., Lyons, T., & Garcia, S. C. (in press). Internet use and sexual health of young men who have sex with men: A mixed-methods study. *Archives of Sexual Behavior*.

Mustanski, B., Newcomb, M., DuBois, S., Garcia, S. C., & Grov, C. 2010). *HIV in young men who have sex with men: A review of epidemiology, risk and protective factors, and interventions*. Manuscript submitted for publication.

Mustanski, B., Newcomb, M., & Garofalo, R. (in press). Mental health of lesbian, gay, and bisexual youth: A developmental resiliency perspective. *Journal of Gay and Lesbian Social Services*.

Noar, S. M., Black, H. G., & Pierce, L. B. (2009). Efficacy of computer technology-based HIV prevention interventions: A meta-analysis. *AIDS, 23*, 107-115.

Oakley, A., Fullerton, D., Holland, J., Arnold, S., France-Dawson, M., Kelley, P., et al. (2010). Sexual health education interventions for young people: A methodological review. *British Medical Journal, 310*, 158-162.

Power, J., McNair, R., & Carr, S. (2009). Absent sexual scripts: Lesbian and bisexual women's knowledge, attitudes and action regarding safer sex and sexual health information. *Culture, Health & Sexuality, 11*, 67-81.

Rainie, L. (2010). *Internet, broadband, and cell phone statistics*. Washington, DC: Pew Internet and American Life Project.

Read, S. J., Miller, L. C., Appleby, P. R., Nwosu, M. E., Reynaldo, S., Lauren, A., . . . Putcha, A. (2006). Socially optimized learning in a virtual environment: Reducing risky sexual behavior among men who have sex with men. *Human Communication Research*, *32*(1), 1-34.

Ritterband, L. M., Gonder-Frederick, L. A., Cox, D. J., Clifton, A. D., West, R. W., & Borowitz, S. M. (2003). Internet interventions: In review, in use, and into the future. *Professional Psychology: Research and Practice, 34*, 527-534.

Ryan, G., & Bernard, H. (2003). Techniques to identify themes. *Field Methods*, *15*, 85-109.

Santelli, J., Ott, M. A., Lyon, M., Rogers, J., Summers, D., & Schleifer, R. (2006). Abstinence and abstinence-only education: A review of U.S. policies and programs. *Journal of Adolescent Health, 38*, 72-81.

Santor, D. A., Poulin, C., LeBlanc, J. C., & Kusumakar, V. (2007). Online health promotion, early identification of difficulties, and help seeking in young people. *Journal of the American Academy of Child and Adolescent Psychiatry, 46*, 50-59.

Savin-Williams, R. C. (2001). *Mom, dad, I'm gay: How families negotiate coming out*. Washington, DC: American Psychological Association.

Seal, D. W., Kelly, J. A., Bloom, F. R., Stevenson, L. Y., Coley, B. I., & Broyles, L. A. (2000). HIV prevention with young men who have sex with men: What young men themselves say is needed. *AIDS Care*, *12*, 5-26.

Taylor, S. J., & Bodgan, R. (1998). *Introduction to qualitative research methods: A guidebook and resource* (3rd ed.). New York, NY: Wiley.

Tikkanen, R., & Ross, M. (2000). Looking for sexual compatibility: Experiences among Swedish men in visiting Internet gay chat rooms. *Cyberpsychology & Behavior, 3*, 605-616.

World Health Organization. (2004). Sexual health: A new focus for WHO. *Progress in Reproductive Health Research, 67*, 1-7.

Ybarra, M. L., Mitchell, K. J., Finkelhor, D., & Wolak, J. (2007). Internet prevention messages: Targeting the right online behaviors. *Archives of Pediatrics & Adolescent Medicine, 163*, 138-145.

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